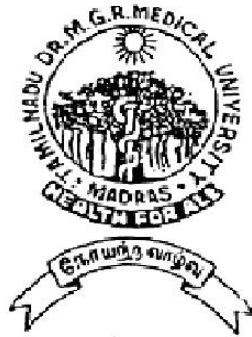


**THE TAMILNADU
Dr. M.G.R. MEDICAL UNIVERSITY
CHENNAI**



**THE STUDY AND MANAGEMENT OF
NON TRAUMATIC ABDOMINAL
SURGICAL EMERGENCIES**

Dissertation submitted for

**MASTER OF SURGERY (BRANCH I)
GENERAL SURGERY DEGREE EXAMINATION
MARCH – 2010**

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“Learn to see, learn to hear, learn to feel, and know that by practice alone you can become expert. Medicine is learned by the bedside and not in the class room”.

- Sir William Osler

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BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled “THE STUDY AND MANAGEMENT OF NON TRAUMATIC ABDOMINAL SURGICAL EMERGENCIES ” submitted by Dr. D. SURESH to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of the requirement for the award of M.S Degree Branch – I (General Surgery) is a bonafide research work were carried out under his direct supervision & guidance.

Prof. Dr. R. Vijayan, M.S.,
Department of Surgery,
Madurai Medical College,
Madurai.

Prof.Dr. Gopinath, M.S.,
Head of the Department,
Department of Surgery,
Madurai Medical College,
Madurai.

DECLARATION

I **Dr. D. SURESH** declare that, I carried out this work on, “THE STUDY AND MANAGEMENT OF NON TRAUMATIC ABDOMINAL SURGICAL EMERGENCIES” at the Department of Surgery, Govt. Rajaji Hospital during the period of October 2008 to September 2009. I also declare that this bonafide work or a part of this work was not submitted by me or any others for any award, degree, diploma to any other University, Board either in India or abroad.

This is submitted to The Tamilnadu Dr. M. G. R. Medical University, Chennai in partial fulfillment of the rules and regulations for the M.S degree examination in General Surgery.

Place : Madurai

Dr. D. SURESH

Date :

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INTRODUCTION

An imprecise term 'ACUTE ABDOMEN' leaves much to be desired from a semantic point of view but is useful in practice; included under the heading are all of the painful abdominal syndromes, sometimes benign; frequently potentially lethal and of several origins; characterized by sudden appearance of pain with accompanying local and general signs and symptoms.

“ The majority of abdominal pains which ensue patients who have been previously fairly well and which lasts as long as 6 hours are caused by conditions of surgical importance”.

The term “Acute Abdomen” denotes a morbid condition with the sudden onset of abdominal pain requiring prompt decision making and surgical intervention correct interpr. After making the diagnosis based on accurate history and the correlation of physical findings, surgical intervention must be planned with the aid of roentgenograms of the abdomen, a blood count and urine analysis and other laboratory investigations.

GENERAL BACKGROUND

It is usually relatively easy to interpret the pain and associated signs and symptoms of acute abdomen. Some times an acute abdomen appears suddenly in a previously healthy individual; at other times, it can occur as a complication in a chronically debilitated patient. Because of the possible disastrous outcome, the examination of an acute abdomen should never be put off.

The history and physical examination are essential; surgical intervention is planned based on the history and prompt and frequent examination of the patient from the outset. Exploratory laparotomy is performed on the basis of the most probable diagnosis. It is obvious that operational research and information science are particularly adaptable to the sometimes rather complex differential diagnosis of “acute abdomen”.

HISTORICAL BACKGROUND

Even in ancient times, surgeons were aware of the potential seriousness of a 'Painful abdomen'. Surgical advances were scarce until the last part of the nineteenth century because of the absence of autopsies and clinico-pathological correlation. Reluctance to perform abdominal exploration existed until a little less than 100 years ago. The long debates, disagreements of the leading side have been described in a report "the cliniques de Lannelongue". Less than 100 years ago, Lannelongue a surgeon, Cornil a pathologist demonstrated at autopsy that the starting point of a purulent peritonitis was a perityphilitis, convincing the contemporaries of its appendicular origin, Monder 1974.

Hippocrates divided abdominal crisis into "colic and ileus" related to intestinal obstruction. The term peritonitis was defined by William Cullen in 1776 to denote inflammation of the lining of the cavity of abdomen, omentum and mesentery.

It is only in the last few decades, that the multiple causes of “acute abdomen” have been well elucidated with the aid of better clinico-pathological correlation and the development of aseptic techniques. Of late improved anesthesiology, good resuscitation, with blood transfusions, newer antibiotics and improved techniques in surgery the outcome is dramatic. It should be remembered that in 1886 Reginald Fitz, a pathologist suggested to surgeons that an inflamed appendix should sometimes be removed; it was in this way that the earlier emergency appendicetomies were performed.

AIM OF THE STUDY

1. To analyse the incidence of Non traumatic abdominal surgical emergencies treated in Govt. Rajaji Hospital, Madurai, in relation to Sex, age etc.
2. To compare the reliability of clinical signs versus radiological signs and preoperative findings versus peroperative findings and post operative outcome.
3. To find out the relative incidence of various abdominal surgical emergencies. (Children below the age of 12 years and gynaecological emergencies are not taken up for this study)

REVIEW OF LITERATURE

‘Acute abdomen’ means the patient complains of acute abdominal symptoms that suggest a disease which definitely or possibly threatens life and may or may not demand immediate interference.

Causes :

1. Inflammation : (eg) acute appendicitis, acute salpingitis acute pneumococcal peritonitis.

If the patient gets pain around the umbilicus or in the epigastrium in the beginning and later on this pain shifts to the right iliac fossa, he is undoubtedly suffering from an acute appendicitis.

2. Perforation of Peptic ulcer, Typhoid ulcer, Diverticular disease etc.

Stages of Perforation etc.

- i) moment of perforation
- ii) stage of peritonism
- iii) stage of reaction
- iv) stage of chemical peritonitis
- v) stage of bacterial peritonitis

3. Acute Intestinal obstruction:

Intestinal obstruction is a common surgical emergency. Because of the serious nature it demands early diagnosis and speedy relief.

a) Dynamic:

Here there is peristalsis working against obstructing agent which may be in the lumen of the bowel such as inspissated faeces or a gall stone; In the wall such as an inflammatory or malignant stricture; or outside the wall as in hernia, adhesions, volvulus or intussusception.

b) Adynamic :

In this condition peristalsis ceases and no true propulsive waves occur as in paralytic ileus or mesenteric vascular occlusion.

4. Obstructed Hernia :

This is an irreducible hernia containing intestine which is obstructed from without or from within; but there is no interference to the blood supply of the bowel. The symptoms are less severe and the onset more gradual than is the case in strangulation, but more often

that not the obstruction culminates in strangulation. A hernia becomes strangulated when the blood supply of its contents is seriously impaired rendering gangrene imminent. Strangulated hernia is dangerous and threatening to life.

PRESENTATION :

Acute abdominal pain may be presented in so many ways.

1. The pain may be one sided or both sided
2. Upper abdominal – related to stomach and duodenum
3. Lower abdominal – may be due to intestinal obstruction or acute appendicitis
4. Colicky – Intestinal or Renal
5. Pain and rigidity – perforation
6. Pain and restlessness – renal colic

1. Acute Appendicitis :

It is one of the commonest causes of acute abdomen.

Cause : The lesion is due to the lumen of the appendix being obstructed by a faecalith, worms rarely foreign body.

Age : can occur at any age

Sex : equal in both sexes

Symptoms :

Murphy's Traid :

1. Pain
2. Vomiting
3. Rise of temperature

1. Pain vague, central abdominal pain to start with finally settling in the right iliac fossa when it becomes more intense
2. Vomiting is due to pylorospasm
3. The patient looks toxic, tongue white and furred, foetor oris and tachycardia present.
4. The right iliac fossa is tender with maximum tenderness in and around the Mcburney's point.
5. Localised muscle guarding and rigidity is present with minimum movement with respiration.
6. Rebound tenderness may be present
7. Pressure on the left iliac fossa may cause pain in the right iliac fossa due to distension of caecum due to displaced gas – Rovsing's sign.
8. There may be psoas spasm with sudden movements or cough causing pain.

9. Bowel sounds are usually heard if the infection is localized in the right iliac fossa.
10. Rectal examination may cause pain deep in the pelvis when the finger is pushed high upto the right.

Various Positions of appendix :

1. Retrocaecal 2. Paracaecal 3. Preileal
4. Postileal 5. Pelvic

Alvarado Score

Migratory RIF pain	1
Anorexia	1
Nausea vomiting	1
RIF tenderness	2
Rebound tenderness	1
Elevated temperature	1
Leucocytosis	2
Shift to Left	1
Total	10

Score 7 to 10 - Strongly suggestive of appendicitis

Score 5 to 7 - +/- appendicitis

Score < 5 - No appendicitis

Stages of acute appendicitis :

I Stage : Infection confined to the appendix

II Stage : Stage of appendicular mass

III Stage : Appendicular mass with perforation requiring laparotomy.

Emergency Appendicectomy

Indication : Stage I and Stage III

Conservative treatment for Stage II. (Ochsner – Sherren regimen)

1. Rest 2. IV fluids 3. Antibiotics
4. Half hourly pulse, temperature and respiratory rate chart.
5. Nothing by mouth 6. Mark the mass for regression
7. Watch for signs of general peritonitis

2. PERFORATED PEPTIC ULCER :

Perforation is the commonest cause of death in peptic ulcer. It is one of the most easily diagnosed acute abdominal

condition. Treated usually by surgical intervention. In delayed diagnosis after 24 hours the outcome is poor.

Incidence :

“It is better to look and see than to wait and see” – Lord Moynihan.

Illingworth and Dick give the sex ratio of men and women as 19:1. According to our data men and women ratio is 16:1. According to Brunner 1903 and Jamieson 1947, the incidence being less in the summer months, greater in November and December.

Pathology:

Perforation is a terminal stage of an ulcer which continues to penetrate the deeper tissues. Duodenal contents escape through the perforation into the general peritoneal cavity resulting in peritoneal irritation. Peritoneum reacts to chemical irritation by secreting peritoneal fluid copiously. This reaction lasts for 3 to 6 hours and is followed by infection with Pyogenic organisms.

Clinical Features:

Signs and symptoms produced by perforation vary according to the time which has elapsed since the rupture occurred. Stages of perforation are :

1. moment of perforation 2. Stage of peritonism
3. stage of reaction 4. stage of chemical peritonitis
5. stage of bacterial peritonitis

Subacute perforation or early sealed perforation is clinically indistinguishable from local peritonitis in the vicinity of the ulcer. Diagnosis of perforation is correctly made in 95% of cases clinically. Plain x ray abdomen erect reveals a. crescent shaped translucent area beneath the Right cupola of the diaphragm in about 70% of cases.

PR : movements of finger in the pelvis causes pain.

Investigations :

1. Plain x ray abdomen erect posture – shows air under the diaphragm.
2. Polymorphonuclear Leucocytosis
3. Hb – PCV will show the amount of dehydration
4. Serum Electrolytes
5. Other Investigations - Urine albumin
 Sugar
 Deposits
 Blood Grouping and Typing
 X ray Chest
 ECG
 Blood Urea, Sugar
 Serum creatinine

Treatment :

This is an emergency

1. Continuous Ryles tube aspiration
2. IV alimentation
3. Antibiotics
4. Emergency laparotomy and sealing of perforation with omental plug
5. Large perforation can be managed with
 - a) Serosal patch closure
 - b) Pyloric exclusion and gastro jejunostomy
 - c) Lateral tube duodenostomy
6. Definite treatment like Gastro jejunostomy with vagotomy or Gastrectomy is done at a later date

3. INTESTINAL OBSTRUCTION:

The important distinction to be drawn is that between simple occlusion and strangulation as it is the crux of clinical evaluation and indeed of treatment.

Simple Occlusion :

is obstruction of the intestine not associated with vascular change. Strangulation does not occur and the sequence of event is less dramatic. It is usually due to bands or adhesions as a result of operations done previously.

Level of Obstruction :

Obstruction is more serious in the small intestine than in the large intestine and higher the obstruction more serious are the results.

Sudden cuttingoff of the blood supply is synonymous with strangulation. It implies progressive interference with the blood supply of the obstructed loop of intestine. Classical example is strangulated Hernia. Gangrene is the natural sequelae and perforation of the bowel occurs. If this happens in hernial sac, cut off from the general peritoneal cavity, general peritonitis will not supervene. If it occurs inside the abdomen, general peritonitis will result.

Clinical Features :

The cardinal clinical features are colicky abdominal pain, distension, vomiting and constipation. But it is true that only one of these may be sufficient for diagnosis of intestinal obstruction.

a. Pain :

Abdominal pain is the first symptom. It commences suddenly and often without warning. If it becomes, increasingly severe, then passes off gradually only to return at intervals of few minutes. These attacks of intestinal colic, which lasts from 3 to 5 minutes, spread all over the abdomen, but are localized mainly at the umbilicus. In between attacks the patient is often quite comfortable. Recurrent attacks of severe colicky or spasmodic abdominal pain is a leading feature of all varieties of acute intestinal obstruction with the sole exception of paralytic ileus.

b. Vomiting :

The higher up the intestinal obstruction the sooner vomiting sets in and the more violent is the regurgitation. In obstruction of the large bowel vomiting may be absent.

c. Distension :

In early cases of small gut obstruction, abdominal distension is often slight or even absent. In subacute or partial obstruction of the small gut, step ladder pattern type of distension may be visible over the abdomen.

Inside the lumen of the bowel there will be collection of fluid which is made up of various digestive juices which is about 8 litres per day.

d. Constipation :

This is classically absolute, with presence of Intestinal obstruction, neither flatus or faeces being passed.

e) Dehydration :

Repeated vomiting and loss of absorptive power by the distended intestine leads to dehydration and signs of dehydration such as dry skin, dry tongue, sunken eyes and oliguria may be present.

Management :

There are three measures for combating the effects of intestinal obstruction.

1. Gastroduodenal or gastrointestinal suction drainage.
2. Maintenance of water & electrolyte balance.
3. Relief of obstruction by surgical intervention.
4. Antibiotics to prevent complications from associated sepsis, either locally (peritonitis) or peripherally (chest complications) or generally (septicaemia).

The main indication for early operation as soon as the fluid and electrolyte depletion has been corrected are :

1. Obstructed or strangulated hernia
2. Internal intestinal strangulation
3. Acute or acute-on-chronic obstruction

Relief of Obstruction by Operation :

When the cause of the obstruction lies within the abdomen but its site is doubtful, a midline incision is employed. When the obstruction lies in the small intestine, the hand is passed to the caecum. If the caecum is collapsed, the obstruction must be in the

small intestine. A search is made to find out a loop of collapsed small intestine somewhere in the pelvis or right iliac fossa.

This is followed proximally. This is done by holding the loop in the long axis of the body and a finger is passed deeply along the left side of its mesentery. The contracted bowel is followed proximally till the level of obstruction is reached. When the bowel is too much distended, it is deflated by means of an aspirating needle.

If the caecum is distended, the obstruction must be in the colon, and by far the commonest cause is colonic carcinoma.

Bands and Adhesions :

They are as a result of previous operation. These bands and adhesions are divided under direct vision.

Internal Strangulation :

The strangulation is first relieved, bowel is examined to determine its viability. If the bowel is dark in colour, the peritoneal coat has lost its lustre, peristalsis is absent, the mesenteric vessels are thrombosed, it is not viable. The treatment is immediate excision and anastomosis.

Evaluation of the history and physical examination :

The diagnosis of most instances of acute abdomen requires a careful history and a complete physical examination. After making a rapid evaluation of the patient, his history should be taken in great detail despite the great pain, discomfort, vomiting and mental disturbances which some patients experience following a state of shock. Physical examination is carried out in two stages. First a preliminary survey of the patient, secondly after resuscitation of the patient. If the patient is in a state of shock, the patient is resuscitated; then sent for investigations like, urinary and Blood investigations and skiagrams. A preoperative diagnosis is made, patient is prepared and taken to the operation theatre for surgical intervention.

Immediate Resuscitative measures done are :

1. Assurance of patients air way
2. Control of visible bleeding
3. Assisted ventilation by Mask and bag for respiratory failure
4. Rapid infusion of sodium containing solutions
5. Urethral catheterization and Ryles tube aspiration of gastric contents.

Rectal and Pelvic Examination :

Is a must in all cases of acute abdominal emergencies.

Laboratory Investigations :

Leucocytosis with an associated neutrophilia is evidence for the presence of purulent inflammation. Laboratory investigations frequently confirm a clinically apparent diagnosis. Rapidly evolving appendicitis is sometimes accompanied by only a very modest neutrophilia. Leucocytosis that is disproportionate with the physical signs is a useful finding when ischaemic damage to the walls of the digestive tract is suspected, particularly the distal part.

The systematic measurement of serum and urinary amylase levels in patients suspected to have perforated duodenal ulcer, strangulated bowel, acute cholecystitis, acute pancreatitis revealed increased levels of this enzyme. Haematocrit gives precious information about plasma volume. Concentrated urine is an important sign of dehydration which increases blood viscosity, a significant factor in thrombus formation.

An increased blood urea level several hours after the start of abdominal pain and vomiting is not indicative of renal failure; but rather of a significant loss of water and electrolytes. In cases of acute

abdomen suspected of ischemic origin; monitoring and laboratory examination must be repeated often. The finding of an incipient metabolic acidosis in these patients indicates the possible development of a segmentary gangrenous necrosis of a part of the digestive tract.

RADIOLOGY:

Radiological examination is quite valuable. A plain film of the abdomen with the patient in erect posture showing chest and abdomen gives a great deal of information. In incapacitated patients a left lateral decubitus view should be used.

The presence of air in the peritoneal cavity confirms a diagnosis of perforation. Air is not usually found in the initial period of perforation in the small intestine. When the clinical signs and symptoms of the patient point strongly towards a diagnosis of perforation of a hollow organ, the absence of air in the peritoneal cavity is not an adequate argument to delay an emergency surgical intervention.

ABDOMINAL EXPLORATION :

When the decision to explore the abdomen has been made, a Nasogastric tube is passed, bladder is catheterized. If the patient has

recently had a meal it will be necessary to pass a stomach tube through which much of the gastric content, can be removed with a suction apparatus.

Liver Abscess :

Pyogenic Liver abscess :

Hippocrates first described liver abscess in the year 400 BC. Oshner described the same in the year 1938.

Untill 1953 recommended treatment open surgical drainage in 1953 Mc Fadzean and associates in Hongkong advocated closed respiration and antibiotics for solitary pyogenic liver abscess.

Etiology : Kuffer cells act as filter for clearance of micro organism in the liver. These organism in the liver via blood stream. The biliary

Potential sources :

1. Bile ducts (Ascending cholangitis)
2. Postal pyaemia
3. Direct extension of contagious diseases
4. Hematoma (trauma)
5. Hepatic artery septicemia
6. Cryptogenic

Pre disposing factors :

1. Diabetes mellitus
2. Cirrhosis
3. Pancreatitis
4. IBD
5. Pyleonephritis
6. Peptic ulcer diseases
7. Lymphoma

Portal, traumatic, cryptogenic are large and solitary.

Bacteriology :

Escherichia coli

Klebsiella

Pseudomonas

Bacterioides

Clinical presentations :**Signs**

Fever

Abdominal pain

Vomiting

Malaise

symptoms

RUQ tenderness

Hepatomegaly

Jaundice

RUQ mass

Chills

Pleural effusion

Diarrhoea

Abcess ruptures :

Signs of peritonisim develops

Laboratory Data :

Increased ALP

WBC > 10,000 / mm³

Albumin < 3 g / dl

Hematocrit < 36%

Bilirubin 72 mg / dl

Radiology :

Plain CXR :

1. Elevated Right hemidiaphragm
2. Right pleural effusion
3. Right lower lobe Atelectasis

Abdominal film :

1. Hepatomegaly
2. Air fluid levels

CT Scan :

More sensitive (95 – 100%)

Lower attenuation than surrounding liver and wall of abscess

may enhance with Intravenous contrast administration.

TREATMENT :

1. US or CT guided abscess drainage
2. Blood cultures drawn
3. Broad spectrum

IV antibiotics

Classical Antibiotics regimen include

1. Aminoglycoside
2. Clindaycin
3. Metronidazole

Treatment given for 4-6 weeks**Surgical drainage include**

1. Multiple abscess
2. Large abscess
3. Ruptured abscess
4. Impending rupture
5. Failed non operative treatment

Amebic liver abscess :

Caused by parasitic protozoas entomeba histolytica

Diagnosis established by detection of antibody to the ameba

Difference between Amebic and pyogenic liver abscess

Amebic	Pyogenic liver abscess
1. Age < 50	Age > 50 yrs
2. Hispanic	No ethnic predispositions
3. Recent travel to determine area	Malignancy
4. Pulmonary dysfunction	Increased Temperature, Pruritis , Jaundice
5. Abdominal pain	septic shock
6. Diarrhoea	Palpale mass
7. Abdominal tenderness	
8. Hepatomegaly	

Amebic liver abscess odourless grams stain and cultures are negative.

Antigen detection or PCR to detect E. histolytica in the stool is better approach than O&P

Treatment :

Metronidazole

Positive responses should be seen by third day of treatment

Response increases to 90% by 10 days

Therapeutic Aspiration :

- No clinical response to drug therapy with in 5-7 days
- Risk of abscess rupture
- Cavity 7.5 cm
- Lesion in single lobe
- Percutaneous aspiration of catheter drainage under us guided can be done.

Surgical :

1. Failed to respond to conservative therapy
2. Percutaneous treatment fails

Acute cholecystitis :**2 types**

1. Calculus
2. Acalculus

Acute obstructive (calculus) cholecystitis

Pathology :

Attack develops due to gall stone, Impacting in the Harman's pouch following obstruction. Gall bladder becomes hyperemic, odematous, Tense and distended. Initial inflammation is chemically induced. Trauma to the gall bladder wall due to gall stone impaction leads to mucosal damage through release of phospholipases that converts lecithin to lysolecithin a known mucosal toxins.

The release of prostaglandin precursor archidonic acid by the action of phospholipase A on lecithin may mediate inflammatory response by producing prostoglandins.

With conservative management 80% of patient as the rising tension is gall bladder lumen from the out pouring of the inflammatory exudates lifts the walls of Hartmann's pouch of the impacting stone which then disengages and drops into gall bladder lumen cystic duct drainage leads to resolution.

20% patients may go for patchy gangrene and perforation.

Signs and symptoms :

1. RUQ pain and tenderness
2. Pyrexia
3. Murphy's sign

4. Nausea
5. Vomiting
6. Ileus and abdominal distention
7. Jaundice

Laboratory tests :

Leucocytosis $> 10 \times 10^9 / l$

Abnormal LFT

Differential Diagnosis

1. Perforated peptic ulcer diseases
2. Acute pancreatitis
3. Retrocaecal appendicitis
4. Hepatitis
5. Right pyelonephritis
6. Lower lobe pneumonia
7. Myocardial infarction

Imaging Tests :

1. Plain X ray
Shows calcified gall stones
2. USG
 - a) Positive murphy's sign

- b) Calculi or sludge
 - c) Thickened gall bladder
 - d) Peri cholecystic oedema
3. Intravenous cholangiography
 4. CT scanning
 5. MRI

Acute acalculus cholecystitis

Acute inflammation of the gall bladder arises in the absence of gall stones although biliary sludge is often present encountered in critically ill patients.

Pre disposing factors :

1. Blood volume depletion
2. Prolonged ileus
3. Morphine administration
4. Intravenous hyperalimentation
5. Multiple blood transfusion
6. Sepsis
7. Starvation

Pathology :

Inflammation develops as a consequences of prolonged distention of gallbladder bile stasis, biliary sludge results in mucosal injury and thrombosis of vessels thrombosis thought to be initiated by the activation of factor XII.

Diagnosis :

1. Fever
2. Leucocytosis
3. Tenderness in right hypochondrium

CT Scan :**USG :****Isotope scintiscanning :****US and CT findings :**

Indication of acalculus cholecystitis include wall thickness greater than 4 mm, intramural gas, peri cholecystitis fluid sub serosal oedema sloughed mucosal membranes.

Complication :

- a) Empyema (suppurative cholecystitis)
- b) Gangrene
- c) Perforation

Treatment :

1. Nil by mouth
2. IVF
3. Electrolyte replacement
4. Nasogastric aspirations
5. Systemic antibiotics
6. Parenteral analgesia

Indication for emergency surgical interventions :

- Progression of disease despite of conservative treatment
- Failure to improve within 24 hrs
- Age > 60 years
- Presence of inflammatory mass
- Detectable gas in gall bladder
- Established generalized peritonitis
- Development of intestinal obstruction.
- Cholecystectomy done by lap / open methods.

METHODS AND MATERIALS

This study material consists of 365 cases of Acute abdomen admitted in seven surgical units in our Department of Surgery, Madurai Medical College, Govt. Rajaji Hospital during the period from Oct 2008 to Sep 2009.

All these cases of pain abdomen admitted in surgical ward were carefully and thoroughly examined to arrive at a clinical diagnosis. A preformed proforma was carefully filled up giving particulars. Importance to the duration of illness and general and special investigation wherever possible.

The following procedure were adopted according to the conditions of the patient ie. conservative management and emergency surgeries.

Based on clinical diagnosis, Investigation patients opted for emergency surgery.

In selected cases, pre operative, peroperative and post operative clinical and operative photographs were taken. All the patient were followed up in the immediate post operative period and in the subsequent period for 3 months till the end of study.

The study included 365 patient with abdominal emergency and treated in all the seven surgical units in Govt. Rajaji Hospital, Madurai Medical College, Madurai.

The patient details were entered in the typed proforma with necessary details for the study preoperatively and were followed up post operatively till the time of discharge of the patients and for 3 months hence forth. The rest of the data were provided by the medical record office.

The age and sex incidence, the common clinical presentations, the different types of management was analysed and discussed in relevance to each of the patients. The various investigations that were available in our Institution has been used, which includes Bio chemical and radiological investigations. Radiological Investigations include plain radiographs and USG of abdomen when necessary.

The various treatment options were considered for each of the cases and each cases was provided best optimal treatment available in our Institution and the post operative complication was also discussed.

In this study, the Non-traumatic abdominal surgical emergency counts to 365 cases.

1.	Acute Appendicitis	-	130 Cases
2.	Perforation peritonitis	-	94 Cases
3.	Intestinal Obstruction	-	112 Cases
4.	Acute cholecystitis	-	12 cases
5.	Liver Abscess	-	17 cases

All these cases were analysed in detail and discussed.

DISCUSSIONS

TABLE - I

ABDOMINAL SURGICAL EMERGENCIES

SEX INCIDENCE

S.No.	Types of Cases	Total No.of cases	Male	Female
1.	Acute Appendicitis	130	91	39
2.	Perforative peritonitis	94	81	13
3.	Intestinal Obstruction	112	76	36
4.	Cholecystitis	12	4	8
5.	Liver abscess	17	14	3

Male : Female ratio

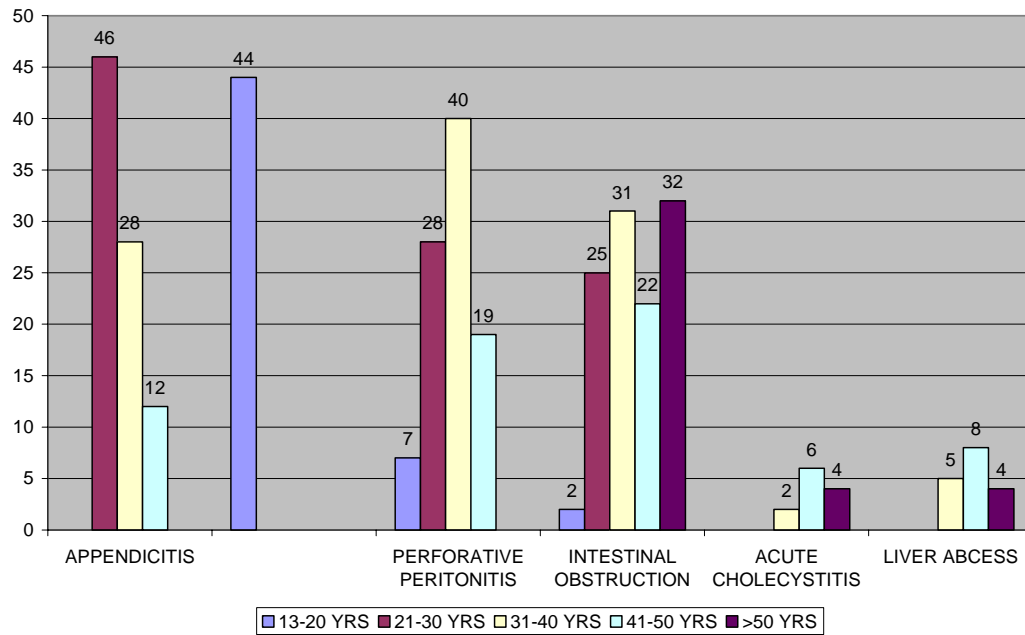
Types of Cases	M: F
Acute Appendicitis	2.3 : 1
Perforative peritonitis	6.2 : 1
Intestinal Obstruction	2.1 : 1
Cholecystitis	3 : 1
Liver abscess	4.6 : 1

TABLE – II

ABDOMINAL SURGICAL EMERGENCIES

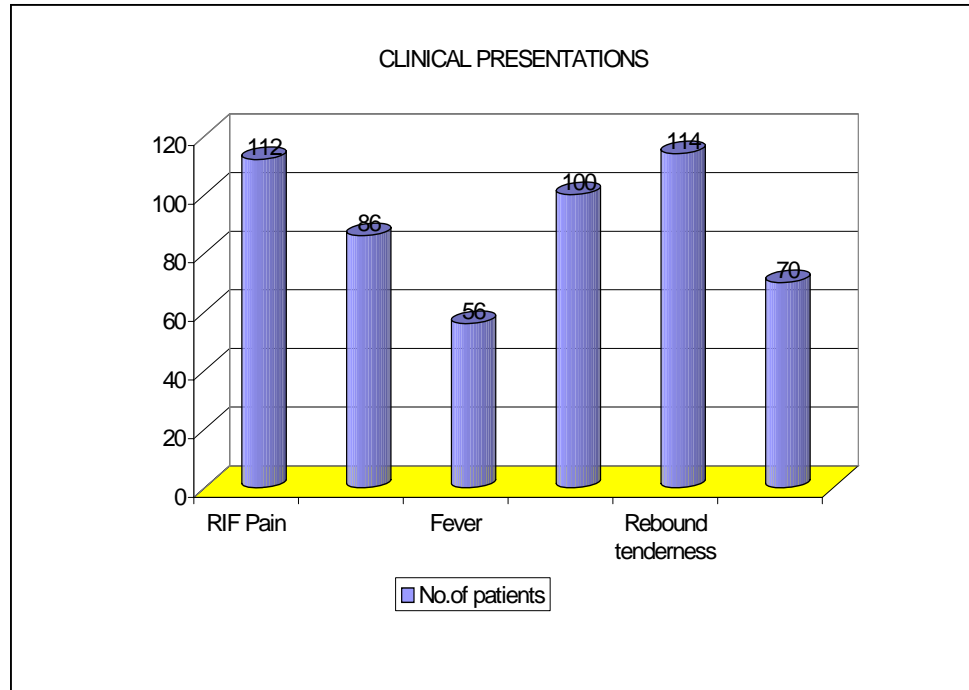
AGE INCIDENCE

AGE DISTRIBUTION



	13-20 YRS	21-30 YRS	31-40 YRS	41-50 YRS	>50 YRS
APPENDICITIS	44	46	28	12	
PERFORATIVE PERITONITIS	7	28	40	19	
INTESTINAL OBSTRUCTION	2	25	31	22	32
ACUTE CHOLECYSTITIS			2	6	4
LIVER ABCESS			5	8	4

ACUTE APPENDICITIS



Clinical Presentations	No.of patients
RIF Pain	112
Vomiting	86
Fever	56
Gaurding	100
Rebound tenderness	114
Per rectal tenderness	70

Among the 130 patients diagnosed as Acute appendicitis routine bio chemical investigation urea, sugar, creatinine and USG of abdomen done in all cases.

Acute Appendicitis	102
Appendicular abscess	17
Appendicular mass	11

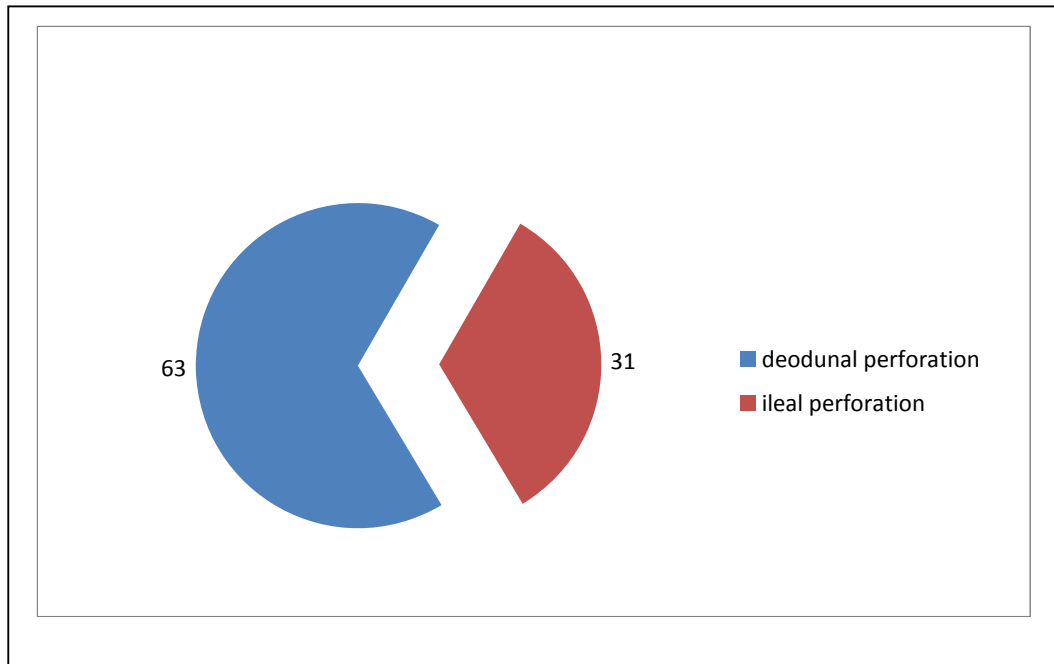
Emergency appendicetomy done in 119 cases. In 17 cases of appendicular abscess. Appendicectomy done right drain was kept postoperatively patients were followed up.

2 patients found to have enterocutaneous fistula and 4 patient had wound infection.

Enterocutaneous fistula was treated conservatively.

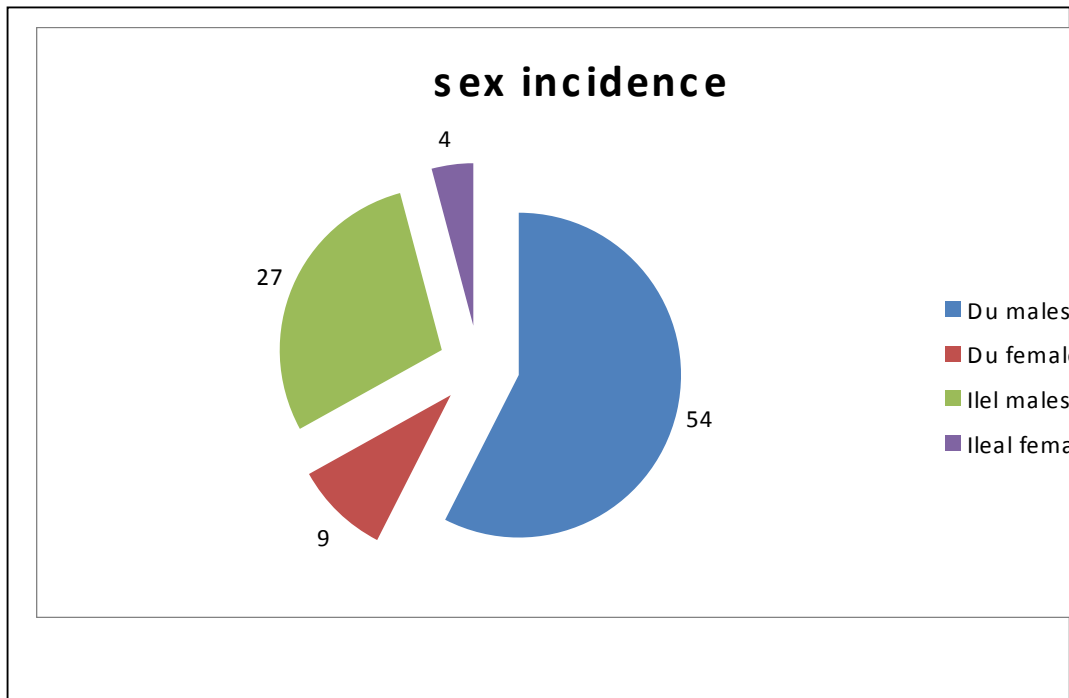
11 cases found to have appendicular mass were treated conservatively, oschner Regimen and were operated 4 weeks later after the resolution of mass.

PERFORATIVE PERITONITIS

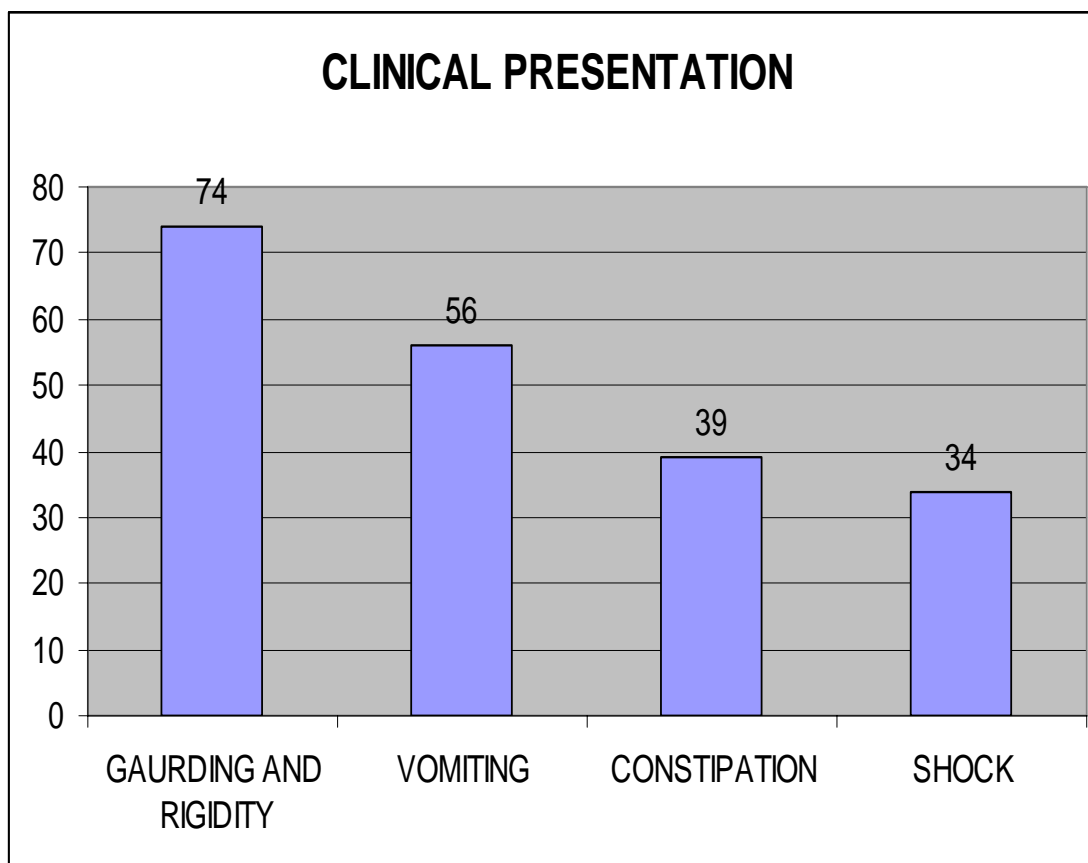


CAUSES	NO OF PT
DU PERFORATION	63
ILEAL PERFORATION	31

PERFORATIVE PERITONITIS

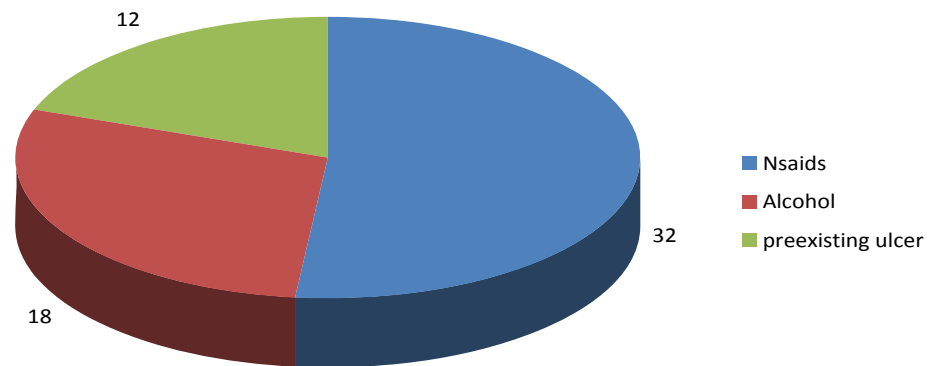


	MALES	FEMALES	RATIO
DU PERFORATION	54	9	6 : 1
ILEAL PERFORATION	27	4	6.9 : 1
Total	81	13	6.2 : 1



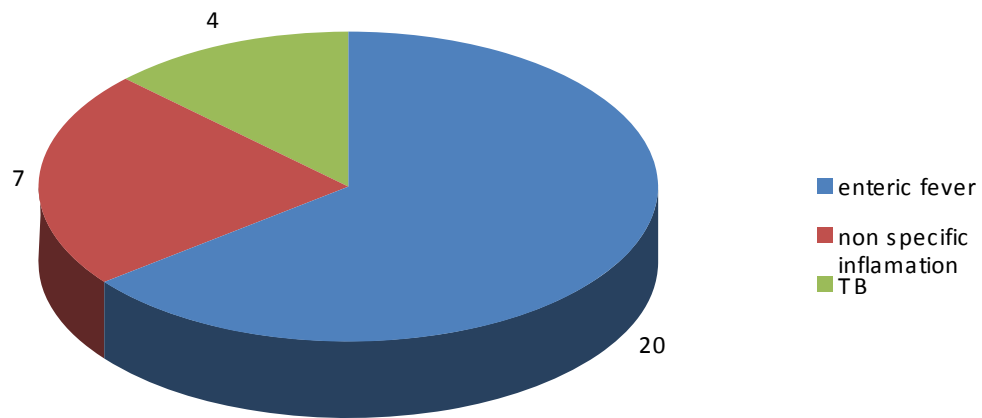
CLINICAL PRESENTATION	NO.OF PATIENTS
ABDOMINAL GAURDING AND RIGIDITY	74
VOMITING	56
CONSTIPATION	39
SHOCK	34

CAUSES OF PERFORATIVE PERITONITIS

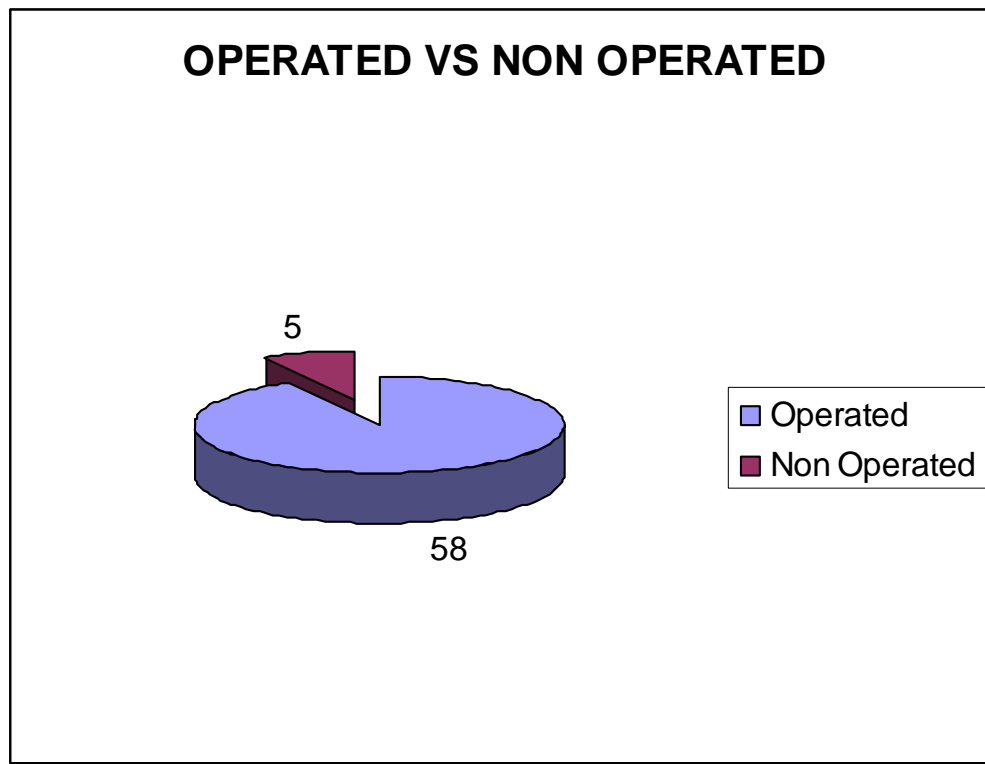


CAUSES	No. of patients
NSAIDS	32
ALCOHOL	18
PRE EXISTING ULCER	12

CAUSES FOR ILEAL PERFORATION

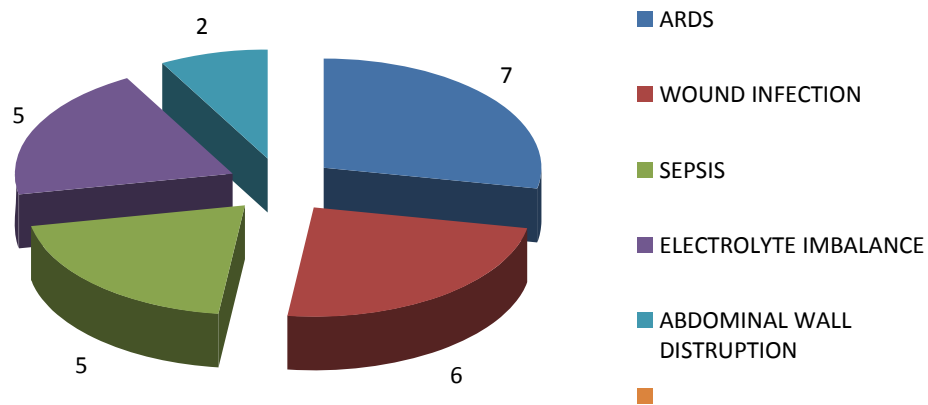


CAUSES	NO OF PATIENTS
ENTERIC FEVER	20
NONSPECIFIC INFLAMATION	7
TB	4



Out of 63 pt 5 could not be operated due to poor general condition of the patient.
Operated on 58 patients

POSTOPERATIVE MORBIDITY



POST OPERATIVE MORBIDITY	NO OF PATIENTS
ARDS	7
WOUND INFECTION	6
SEPSIS	5
ELECTROLYTE IMBALANCE	5
ABDOMINAL WALL DISRUPTION	2

Among the 94 cases of perforative peritonitis. 63 patients had Du perforation and 31 cases found to have ileal perforation. All the patient were subjected to routine blood investigation Urea, sugar, creatinine x ray abdomen erect, X ray chest were done.

Air under diaphragm seen in 78% of cases (69 patient)

Among the 63 patient, 4 patient were managed with flank drain since the general conditions was poor emergency laparotomy performed in 58 cases. Grahams live omental patch closure done in 53 patients in 5 cases jejunal serosal patch closure done. 5 patients could not operated because of poor general condition does not fit for anaesthesia. 8 patient (12%) had found to be expired.

Among the 31 patients diagnosed ileal perforation. Emergency laparotomy performed in all cases.

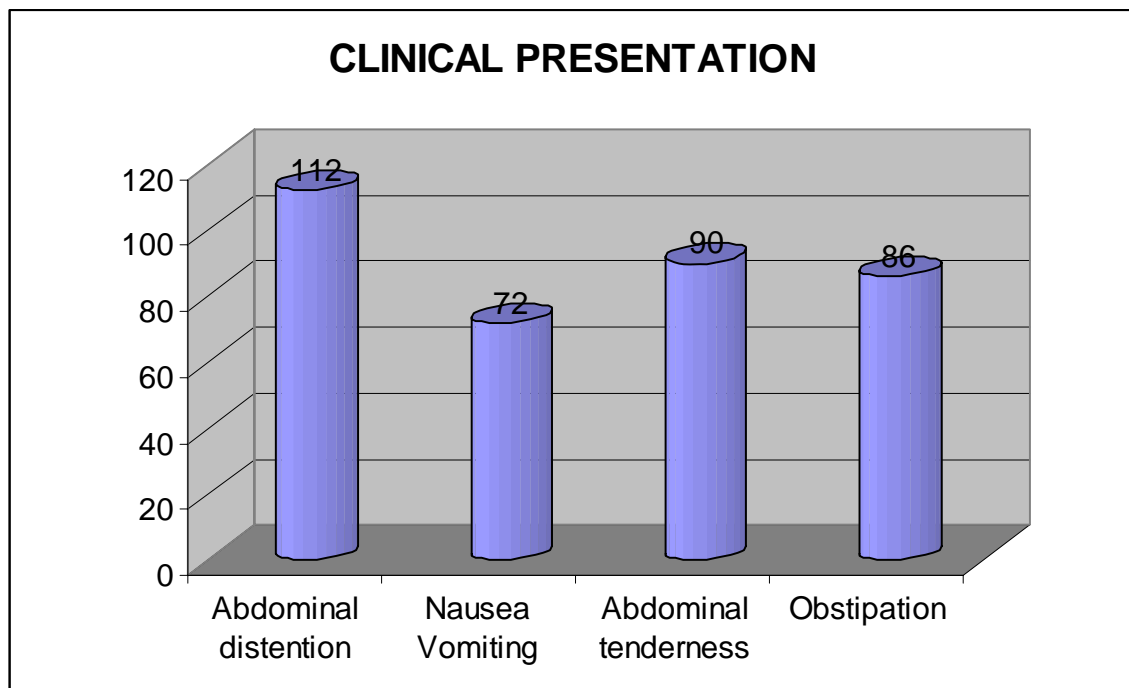
27 cases underwent primary closure. 4 cases underwent resection and anastomosis. Patient followed up in immediate post operative period and 3 months after.

4 patients diagnosed as TB, were started on ATT. Responded well to treatment.

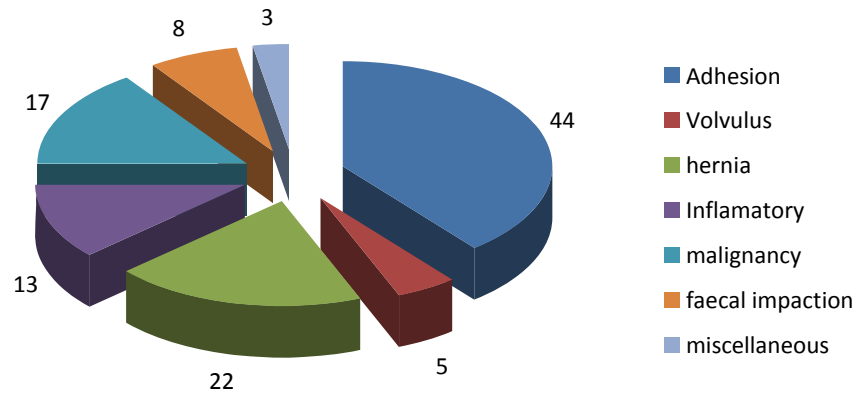
INTESTINAL OBSTRUCTION

Clinical presentation

Clinical features	No.of patients
Abdominal distention	112
Nausea vomiting	72
Abdominal pain	90
Obstipation	86



CAUSES FOR DYNAMIC INTESTINAL OBSTRUCTION



CAUSES	NO OF PATIENTS
ADHESION	44
VOLVULUS	5
HERNIA	22
PSEUDO OBSTRUCTION	13
MALIGNANCY	17
FECAL IMPACTION	8
SMA occulsion	3

Diagnosis	Number of cases			
	Operation	Conservative management	Procedure done	Mortality
Adhesion (44)	24	20	Resection and anastomosis	5
VOLVULUS(5)	5		Hartman's procedure	
HERNIA (22)	22		Reduction (18) Herniaphy – Resection & Anastomosis (4)	1
PSEUDO OBSTRUCTION(13)			Conservative	
MALIGNANCY (17)	17		Diversion colostomy (17)	
FAECAL IMPACTION (8)	1	7	Enterostomy (1)	
SMA OCCLUSION (3)	3		Resection & Anastomosis (3)	3

Among 44 patient, who were diagnosed adhesive obstruction all were found to be due to previous abdominal surgery. Patient were managed with nil oral iv fluids, NGA, antibiotics followed which

Operated - 24 patients

(Resection and Anastomosis)

Conservative management - 20 patients

Mortality - 5 cases

Anastomotic leak - 5 cases

Voluvulus

operated on all 5 cases underwent Hartman procedure.

Obstructed groin hernia :

Among the 22 cases reduction and herniaraphy done in 18 cases. Resection anastomosis done in 4 cases. These 4 cases found to be strangulated hernia. Mortality in one case.

Malignancy

Among the 17 cases, 16 found to be rectal carcinoma, and 1 case was analcanal melanoma.

Emergency sigmoid loop colostomy done in all cases.

Fecal impaction :

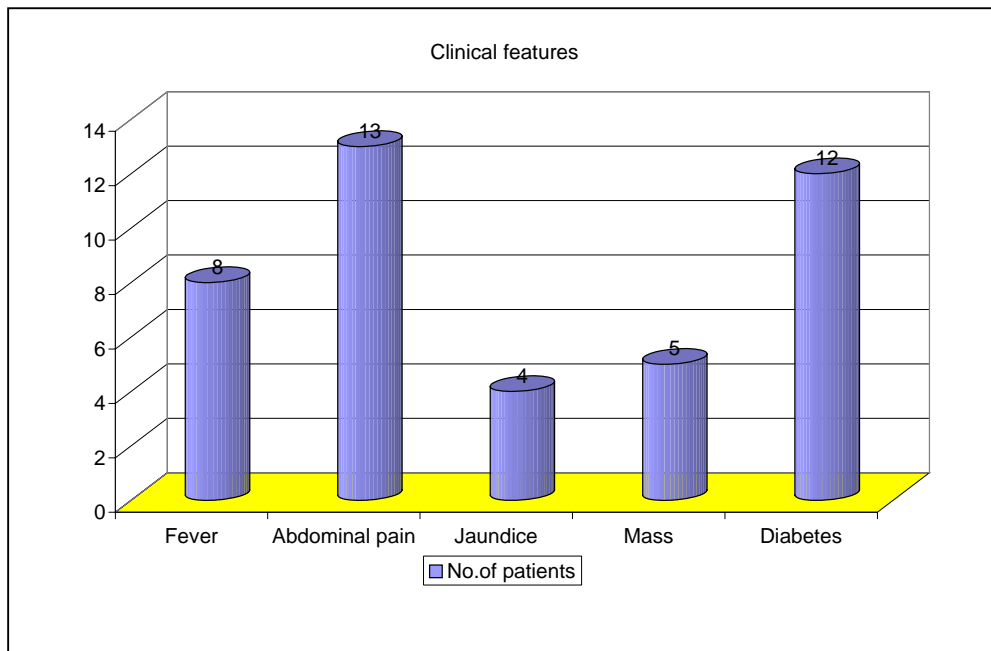
Among 8 cases, 7 cases managed conservatively and 1 case operated enterostomy done and obstruction relieved.

SMA occlusion :

All the 3 cases were operated extensive small bowel resection an anastomosis done.

LIVER ABSCESS :

Clinical presentation	No.of patients
Fever	8
Abdominal pain	13
Jaundice	4
Mass	5
Diabetes	12



All patients were managed with nil oral iv fluids, antibiotics

USG done in all cases demonstrated multiple abscess in 14 cases and 3 cases with solitary abscess confined to single lobe.

Routine investigation performed including LFT, BT, CT

Operated - 14 cases

Therapeutic aspirations - 3 cases

Post operatively patient was managed with iv fluids, antibiotics, analgesis, FFP, Human albumin.

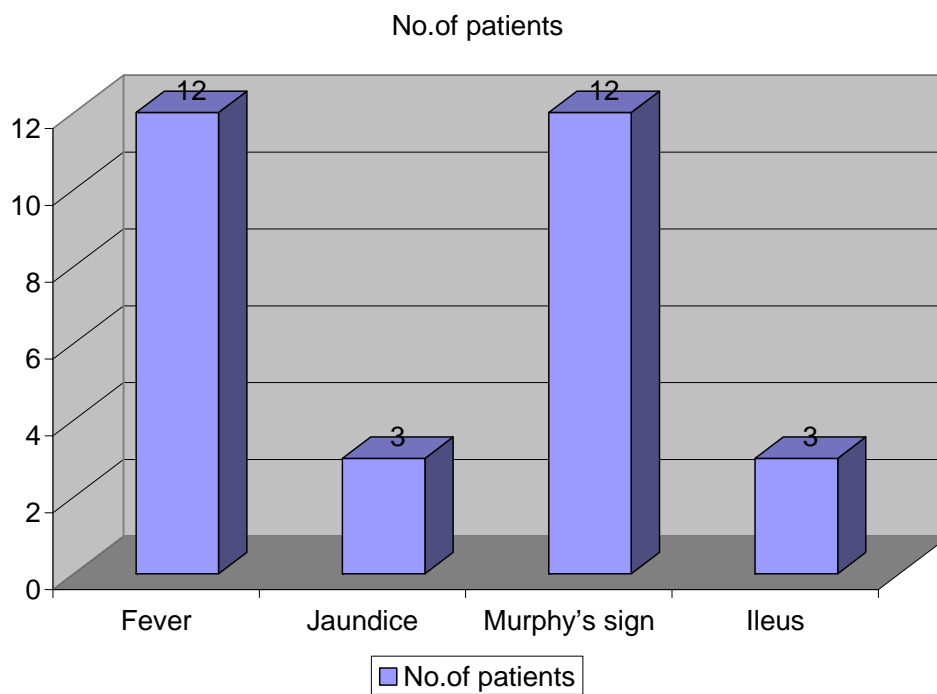
Post operative complication

Wound infection was found in 2 cases

Acute cholecystitis :

Clinical Features

Clinical presentation	No.of patients
Fever	12
Jaundice	3
Murphy's sign	12
Ileus	3



All cases were managed with nil oral, iv fluids, antibiotics, NGA, analgesis.

Emergency cholecystectomy done in all 12 cases.

Post operative complication :

Wound infection – 2 cases.

Mortality : 1 case (Gangrenous gall bladder)

RESULTS

Acute appendicitis :

Among 130 cases, Male : Female incidence is 2.3 : 1. (79 %) 102 cases were acute appendicitis, (13%) 17 cases were appendicular abscess, (8%) 11 cases were appendicular mass presented with RIF pain (86%) 112 cases, vomiting (66%) 86 cases, fever (43%) 56 cases. All cases underwent surgery. 2 cases 1.5% had enterocutaneous managed conservatively 4 cases (3%) had wound infection in immediate post operative period, managed by secondary suturing.

Perforative peritonitis:

Among 94 cases, Male : Female incidence is 6.2 : 1. 63 found to be DU perforation with sex incidence of 6 : 1.

Clinical features 72 cases (78%) had abdominal pain, 34 cases (36%) presented with shock. In 63 cases of DU perforation NSIAD induced were (50%) (32 cases). Alcoholism in 16 cases (25%) and 16 cases (25%) found to have preexisting ulcer diseases among the DU perforation.

Among the 63 patient, 4 patient were managed with flank drain since the general conditions was poor emergency laparotomy

performed in 58 cases. Grahams live omental patch closure done in 53 patients in 5 cases jejunal serosal patch closure done. 5 patients could not operated because of poor general condition does not fit for anaesthesia. 8 patient (12%) had found to be expired.

31 cases of ileal perforation with sex incidence of 6.9: 1, inflammatory 7 cases (33%), TB 4 cases (13%) enteric fever 20cases (74%) primary closure done in 27 cases(87%) resection anostomosis in 4 cases (13%)

X ray abdomen revealed air under diaphragm in 86 cases (78%).

Intestinal Obstruction :

Adhesion :

Among 44(40%) patients, who were diagnosed adhesive obstruction all were found due to previous abdominal surgery. Patient were managed with nil oral iv fluids, NGA, antibiotics followed which

Operated - 24 patients (resection and anostomosis)

Conservative management - 20 patients

Mortality - 5 cases

Anastomatic Leak- 5 cases

Voluvulus

operated on all 5 cases (4%) underwent Hartman procedure.

Post operative wound dehiscence found in 5 patients.

Obstructed groin hernia :

Among the 22 cases (20%) reduction and hernioraphy done in 18 cases. Resection and anastomosis done in 4 cases. These 4 cases found to be strangulated hernia and mortality in one case.

Malignancy

Among the 17 cases (15%), 16 found to be rectal carcinoma, and 1 case was anal canal melanoma.

Emergency sigmoid loop colostomy done in all cases.

Fecal impaction :

Among 8 cases (7%) 7 cases managed conservatively and 1 case operated enterostomy done and obstruction relieved.

Pseudo obstruction :

13 cases (11%), all were managed conservatively

SMA occlusion :

All the 3 cases (3%) were operated extensive small bowel resection an anastomoses done. All three cases were expired due to sepsis, extensive bowel resection and electrolyte imbalance.

Liver Abscess :

Among the 14 cases, Male : Female ratio 4.6 : 1. USG done in all cases demonstrated multiple abscess in 14 cases and 3 cases with solitary abscess confined to single lobe.

Operated - 14 cases

Therapeutic aspirations - 3 cases

Post operative complication

Wound infection was found in 2 cases

Acute Cholecystitis :

Emergency cholecystectomy done in all 12 cases.

Post operative complication :

Wound infection – 2 cases.

Mortality : 1 case (Gangrenous gall bladder)

CONCLUSION

Judging from the results of this present study it comes to a firm conclusion that the

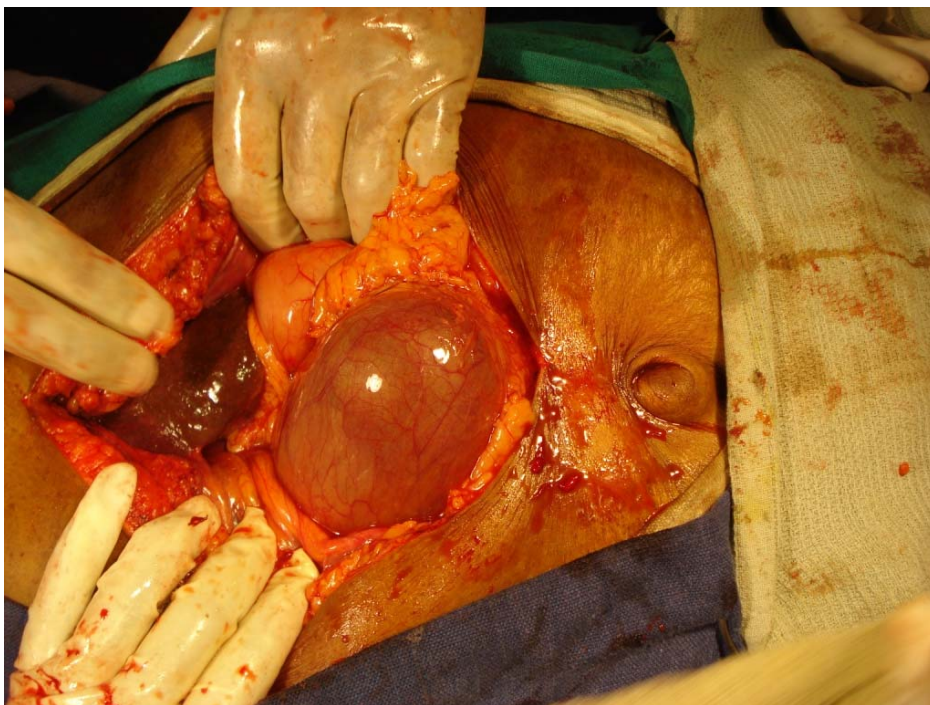
1. Acute abdominal emergency incidence is more common in males when compared to that of females.
2. Among the Duodenal perforation NSAIDs induced were more common.
3. Smaller perforation < 1 cm can be closed with Graham's live omental patch closure.
4. In larger perforation, serosal patch closure can be done for better results.
5. Smaller the perforation and shorter the duration better the outcome with low morbidity and mortality.
6. Among the ileal perforation most common etiology found to be enteric fever. Prognosis is good if resection anastomosis done in larger perforation and in unhealthy bowel.
7. Incase of intestinal obstruction major cause were due to post operative adhesions. Next is groin hernias. Mortality increases with prolonged surgery, age > 50 years and in extensive bowel resection. Decreased urine output,

tachycardia, and fever in the immediate post operative period indicates anastomotic dehiscence.

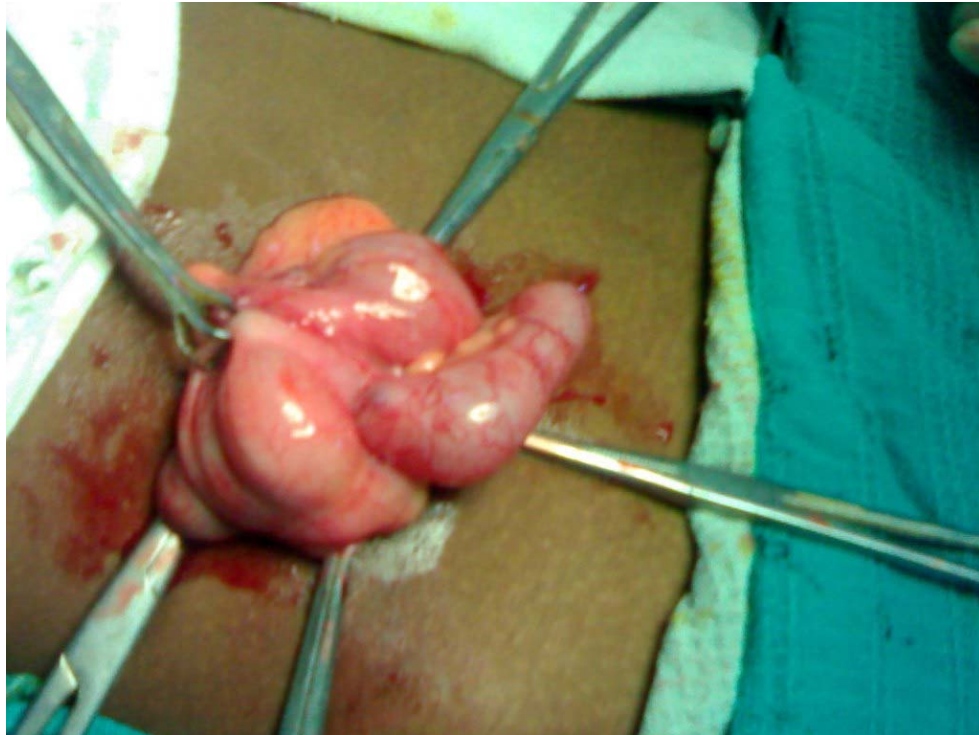
8. In case of liver abscess laparotomy and drainage in multiple and large abscess should be done for better results.
9. Early cholecystectomy is treatment of choice in patient with acute cholecystitis with acceptable risks.
10. In unequivocal clinical diagnosis in case of appendicitis should be subjected to USG abdomen reduces the rate of negative appendectomy.



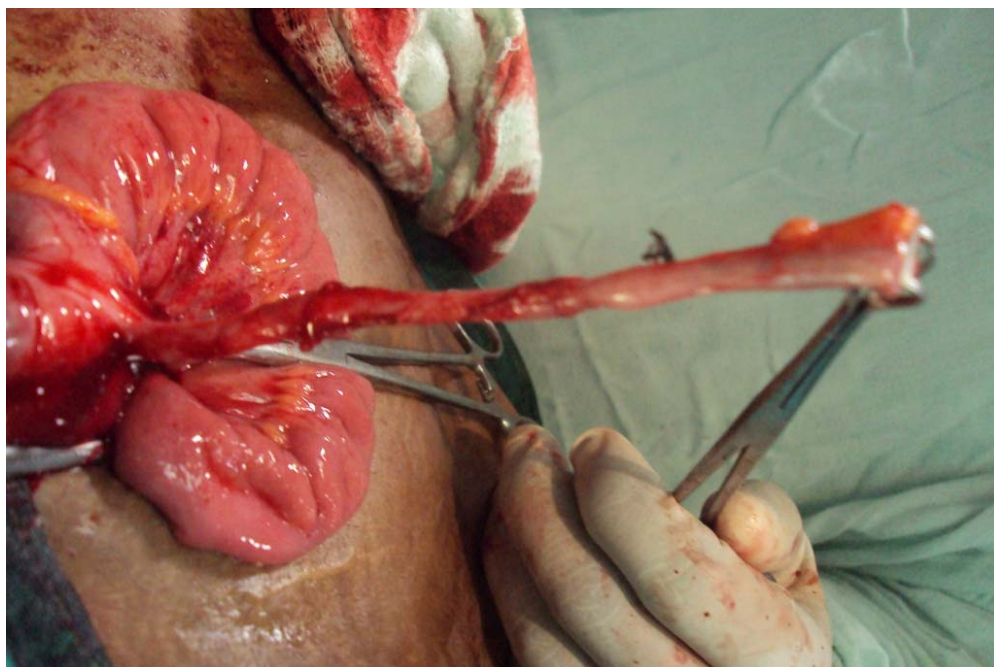
ACUTE CALCULUS CHOLECYSTITIS



INFLAMMED GALL BLADDER



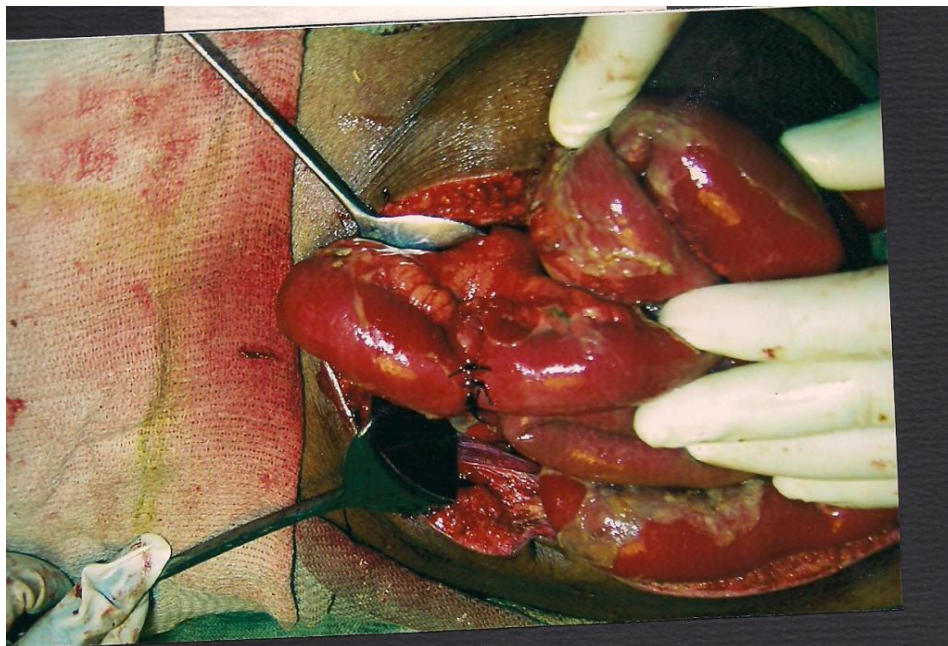
INFLAMMED APPENDIX



APPENDICETOMY IN PROGRESS



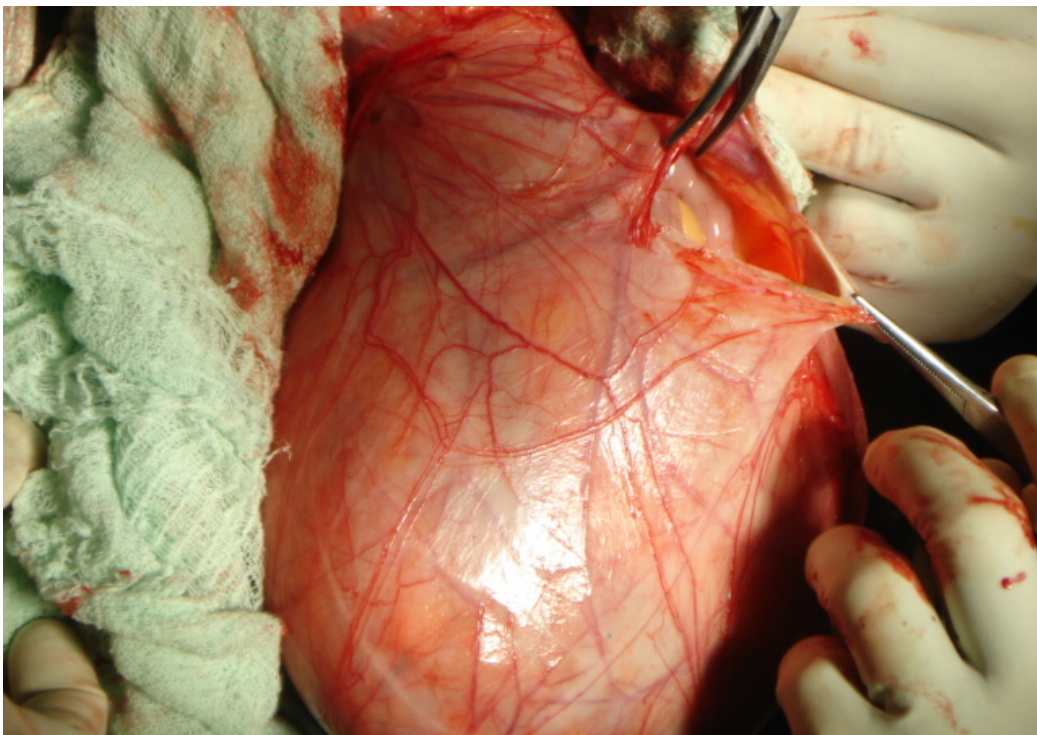
ILEAL PERFORATION



RESECTION ANASTOMOSIS DONE FOR ILEAL PERFORATION



SIGMOID VOLVULUS



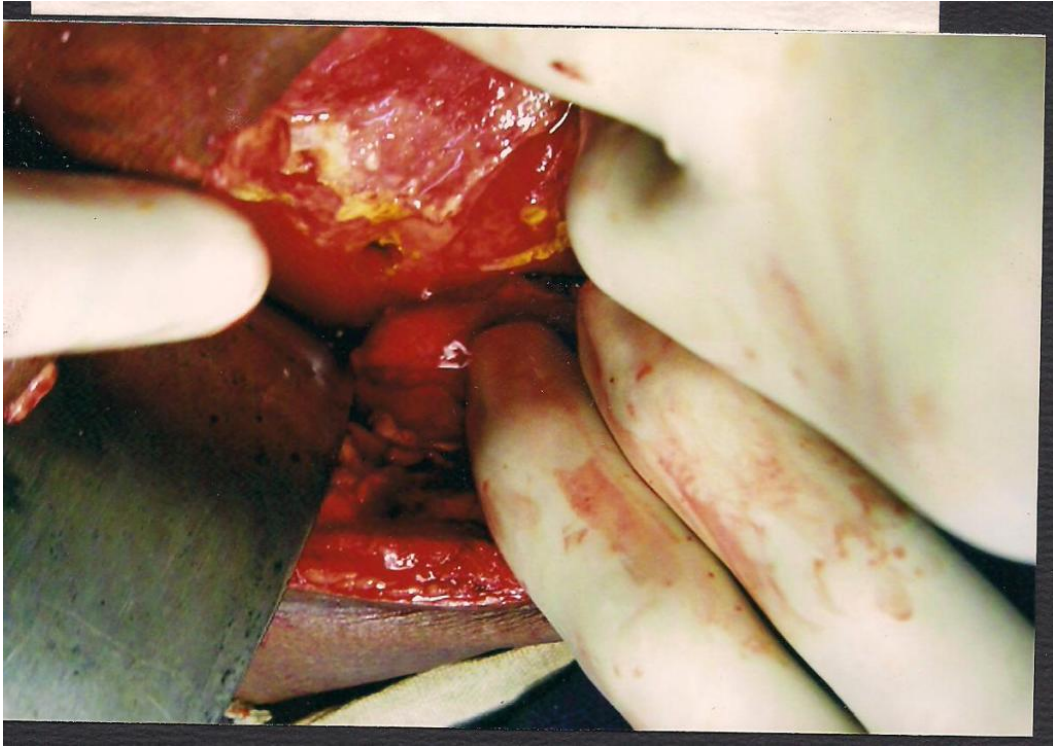
OBSTRUCTED INGUINAL HERNIA



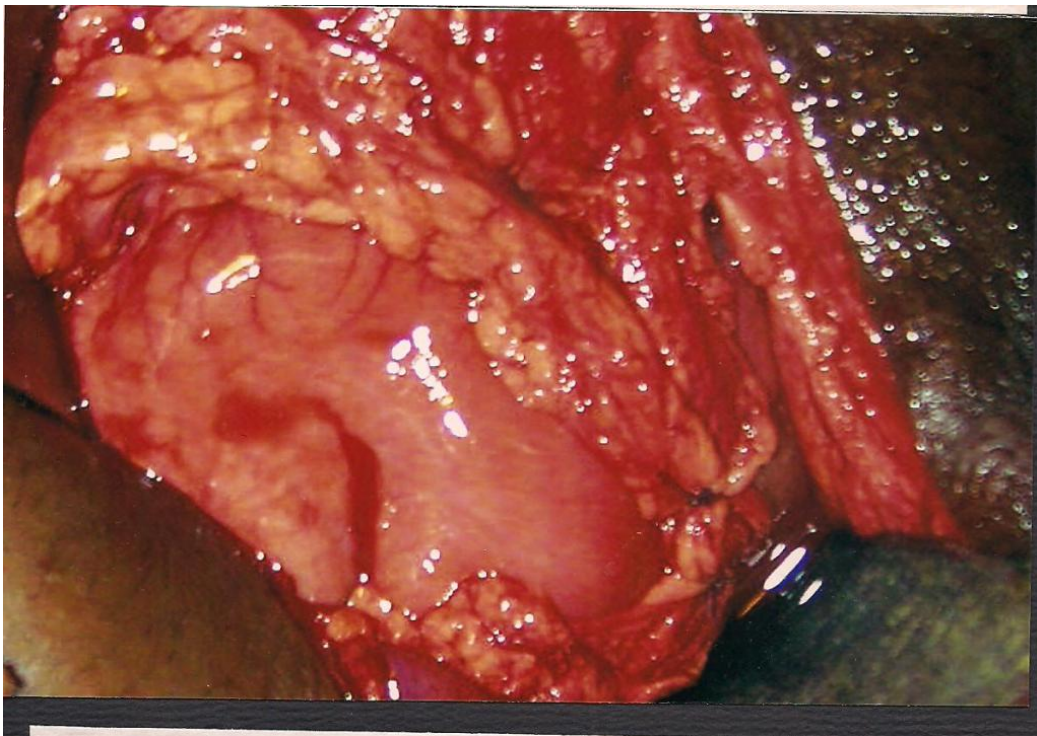
LIVER ABCESS – USG GUIDED ASPIRATION



ANCHOVY SAUCE PUS



DU PERFORATION



GRAHAM'S LIVE OMENTAL PATCH CLOSURE

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PORFORMA

Name

Age

Sex

Ip no

Clinical presentation graded as follows

ACUTE APPENDICITIS

CLINICAL PRESENTATION	GRADES
RIF PAIN	1
VOMITING	2
FEVER	3
GAURDING	4
REBOUND TENDERNESS	5
PER RECTAL TENDERNESS	6

CLINICAL DIAGNOSIS

ACUTE APPENDICITIS

APPENDICULAR MASS

APPENDICULAR ABCESS

COMPLICATION

WOUND INFECTION - WI

ENTEROCUTANEOUS FISTULA - ECF

PERFORATIVE PERITONITIS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
GAURDING& RIGIDITY	1
VOMITING	2
CONSTIPATION	3
SHOCK	4

CLINICAL DIAGNOSIS

PERFORATIVE PERITONITIS

DU PERFORATION

SUFFIX

NSAIDS	N
ALCHOLISM	A
PEPTIC ULCER DISEASES	P
ILEAL PERFORATION	
ENTERIC FEVER	E
INFLAMATORY	I
TB	T

COMPLICATION

COMPLICATION	GRADES
ARDS	1
WOUND INFECTION	2
SEPSIS	3
ELECTROLYTE IMBALANCE	4
ABDOMINAL WALL DISRUPTION	5

OPERATED

OMENTAL PATCH CLOSURE	OMC
SEROSAL PATCH CLOSURE	SPC
FLANK DRAIN	FD
NOT OPERATED	NP
RESECTION&ANOSTOMOSIS	R&A
PRIMARY CLOSURE	PC

INTESTINAL OBSTRUCTION

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
ABDOMINAL DISTENTION	1
NAUSEA&VOMITING	2
ABDOMINAL TENDERNESS	3
OBSTIPATION	4

ADHESION

HERNIA

VOLVULUS

PSEUDOOBSTRUCTION

MALIGNANCY

FECAL IMPACTION

SMA OCCULSIONS

SURGERY

RESECTION & ANOSTAMOSIS

R&A

HERNIORAPHY

HRY

HARTMANS PROCEDURE

HARTMAN

COLOSTOMY

ENTEROSTOMY

CONSERVATIVE MANAGEMENT

CM

COMPLICATION

WOUND INFECTION

WI

ANASTOMATIC LEAK

AL

LIVER ABCESS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
FEVER	1
ABDOMINAL PAIN	2
JAUNDICE	3
MASS	4
DIABETES	5

LIVER ABCESS

LAPROTOMY& DRAINAGE

ASPIRATION

COMPLICATION

WOUND INFECTION

WI

ACUTE CHOLECYSTITIS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
FEVER	1
JAUNDICE	2
MURPHYS SIGN	3
ILEUS	4

ACUTE CHOLECYSTITIS

SURGERY

CHOLECYSTECTOMY

COMPLICATION

WOUND INFECTION

WI

IN ALL CASES MORTALITY GRADED AS

1

PORFORMA

Name

Age

Sex

Ip no

Clinical presentation graded as follows

ACUTE APPENDICITIS

CLINICAL PRESENTATION	GRADES
RIF PAIN	1
VOMITING	2
FEVER	3
GAURDING	4
REBOUND TENDERNESS	5
PER RECTAL TENDERNESS	6

CLINICAL DIAGNOSIS

ACUTE APPENDICITIS

APPENDICULAR MASS

APPENDICULAR ABCESS

COMPLICATION

WOUND INFECTION - WI

ENTEROCUTANEOUS FISTULA - ECF

PERFORATIVE PERITONITIS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
GAURDING& RIGIDITY	1
VOMITING	2
CONSTIPATION	3
SHOCK	4

CLINICAL DIAGNOSIS

PERFORATIVE PERITONITIS

DU PERFORATION

SUFFIX

NSAIDS	N
ALCHOLISM	A
PEPTIC ULCER DISEASES	P
ILEAL PERFORATION	
ENTERIC FEVER	E
INFLAMATORY	I
TB	T

COMPLICATION

COMPLICATION	GRADES
ARDS	1
WOUND INFECTION	2
SEPSIS	3
ELECTROLYTE IMBALANCE	4
ABDOMINAL WALL DISRUPTION	5

OPERATED

OMENTAL PATCH CLOSURE	OMC
SEROSAL PATCH CLOSURE	SPC
FLANK DRAIN	FD
NOT OPERATED	NP
RESECTION&ANOSTOMOSIS	R&A
PRIMARY CLOSURE	PC

INTESTINAL OBSTRUCTION

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
ABDOMINAL DISTENTION	1
NAUSEA&VOMITING	2
ABDOMINAL TENDERNESS	3
OBSTIPATION	4

ADHESION

HERNIA

VOLVULUS

PSEUDOOBSTRUCTION

MALIGNANCY

FECAL IMPACTION

SMA OCCULSIONS

SURGERY

RESECTION & ANOSTAMOSIS

R&A

HERNIORAPHY

HRY

HARTMANS PROCEDURE

HARTMAN

COLOSTOMY

ENTEROSTOMY

CONSERVATIVE MANAGEMENT

CM

COMPLICATION

WOUND INFECTION

WI

ANASTOMATIC LEAK

AL

LIVER ABCESS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
FEVER	1
ABDOMINAL PAIN	2
JAUNDICE	3
MASS	4
DIABETES	5

LIVER ABCESS

LAPROTOMY& DRAINAGE

ASPIRATION

COMPLICATION

WOUND INFECTION

WI

ACUTE CHOLECYSTITIS

CLINICAL PRESENTATION

CLINICAL PRESENTATION	GRADES
FEVER	1
JAUNDICE	2
MURPHYS SIGN	3
ILEUS	4

ACUTE CHOLECYSTITIS

SURGERY

CHOLECYSTECTOMY

COMPLICATION

WOUND INFECTION

WI

IN ALL CASES MORTALITY GRADED AS

1